

GSL6TVS10A thru GSL6TVS180A

Surface Mount Transient Voltage Suppressors
 Peak Pulse Power 600W Stand-off Voltage 10V to 180V

Features

- Very fast response time
- Glass passivated junction
- Moisture sensitivity: Level 1, per J-STD-020
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21 definition
- 600 W peak pulse power capability with a 10/1000 μ s waveform



eSGB (SMAF)

Applications

For use in sensitive electronics protection against voltage transients induced by lightning or inductive load switching. Key applications include protection of I/O interfaces, industrial and LED lighting applications, DC power buses, and other vulnerable circuits used in consumer electronics.

Maximum Ratings and Thermal Characteristics

($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Power Dissipation With a 10/1000 μ s Waveform	P_{PPM}	600	W
Peak Pulse Current With a 10/1000 μ s Waveform	I_{PPM}	See Next Table	A
Power Dissipation, on Infinite Heat Sink at $T_L=75^\circ\text{C}$	P_D	4	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave	I_{FSM}	80	A
Typical Thermal Resistance, Junction To Ambient ¹	$R_{\theta JA}$	85	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance, Junction To Case ¹	$R_{\theta JC}$	15	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance, Junction To Lead ¹	$R_{\theta JL}$	18	$^\circ\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Note:

1. The thermal resistance from junction to ambient, case or lead, mounted on P.C.B with 5 \times 5mm copper pads.

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Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Part Number	Marking	Breakdown Voltage, V_{BR} (V)		Test Current, I_T (mA)	Stand off Voltage, V_{WM} (V)	Maximum Reverse Leakage at V_{WM}, I_D (μA)	Maximum Peak Pulse Current, I_{PPM} (A)	Maximum Clamping Voltage at I_{PPM}, V_C (V)
		Min	Max					
GSL6TVS10A	L610A	11.1	12.3	1.0	10	5.0	35.3	17.0
GSL6TVS11A	L611A	12.2	13.5	1.0	11	5.0	33.0	18.2
GSL6TVS12A	L612A	13.3	14.7	1.0	12	5.0	30.2	19.9
GSL6TVS13A	L613A	14.4	15.9	1.0	13	1.0	27.9	21.5
GSL6TVS14A	L614A	15.6	17.2	1.0	14	1.0	25.9	23.2
GSL6TVS15A	L615A	16.7	18.5	1.0	15	1.0	24.6	24.4
GSL6TVS16A	L616A	17.8	19.7	1.0	16	1.0	23.1	26.0
GSL6TVS17A	L617A	18.9	20.9	1.0	17	1.0	21.7	27.6
GSL6TVS18A	L618A	20.0	22.1	1.0	18	1.0	20.5	29.2
GSL6TVS20A	L620A	22.2	24.5	1.0	20	1.0	18.5	32.4
GSL6TVS22A	L622A	24.4	26.9	1.0	22	1.0	16.9	35.5
GSL6TVS24A	L624A	26.7	29.5	1.0	24	1.0	15.4	38.9
GSL6TVS26A	L626A	28.9	31.9	1.0	26	1.0	14.3	42.1
GSL6TVS28A	L628A	31.1	34.4	1.0	28	1.0	13.2	45.4
GSL6TVS30A	L630A	33.3	36.8	1.0	30	1.0	12.4	48.4
GSL6TVS33A	L633A	36.7	40.6	1.0	33	1.0	11.3	53.3
GSL6TVS36A	L636A	40.0	44.4	1.0	36	1.0	10.3	58.1
GSL6TVS40A	L640A	44.4	49.1	1.0	40	1.0	9.3	64.5
GSL6TVS43A	L643A	47.8	52.8	1.0	43	1.0	8.6	69.4
GSL6TVS45A	L645A	50.0	55.3	1.0	45	1.0	8.3	72.7
GSL6TVS48A	L648A	53.3	58.9	1.0	48	1.0	7.8	77.4
GSL6TVS51A	L651A	56.7	62.7	1.0	51	1.0	7.3	82.4
GSL6TVS54A	L654A	60.0	66.3	1.0	54	1.0	6.9	87.1
GSL6TVS58A	L658A	64.4	71.2	1.0	58	1.0	6.4	93.6
GSL6TVS60A	L660A	66.7	73.7	1.0	60	1.0	6.2	96.8
GSL6TVS64A	L664A	71.1	78.6	1.0	64	1.0	5.8	103
GSL6TVS70A	L670A	77.8	86.0	1.0	70	1.0	5.3	113
GSL6TVS75A	L675A	83.3	92.1	1.0	75	1.0	5.0	121
GSL6TVS78A	L678A	86.7	95.8	1.0	78	1.0	4.8	126
GSL6TVS85A	L685A	94.4	104	1.0	85	1.0	4.4	137
GSL6TVS90A	L690A	100	111	1.0	90	1.0	4.1	146
GSL6TVS100A	L6100A	111	123	1.0	100	1.0	3.7	162
GSL6TVS110A	L6110A	122	135	1.0	110	1.0	3.4	177
GSL6TVS120A	L6120A	133	147	1.0	120	1.0	3.1	193
GSL6TVS130A	L6130A	144	159	1.0	130	1.0	2.9	209
GSL6TVS150A	L6150A	167	185	1.0	150	1.0	2.5	243
GSL6TVS160A	L6160A	178	197	1.0	160	1.0	2.3	259
GSL6TVS170A	L6170A	189	209	1.0	170	1.0	2.2	275
GSL6TVS180A	L6180A	201	222	1.0	180	1.0	2.1	292

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Ratings and Characteristics Curves

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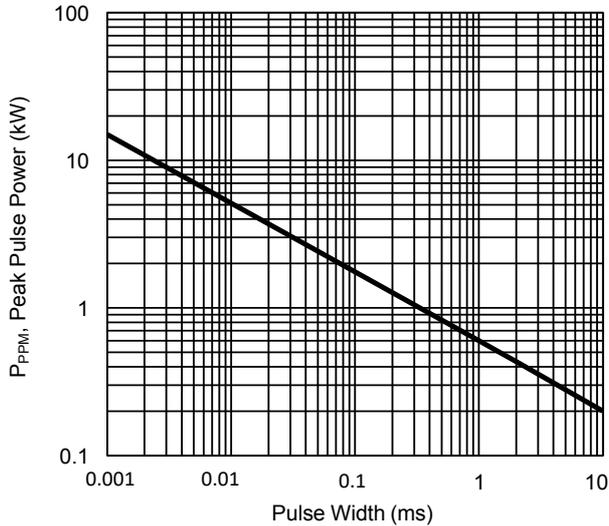


Figure 1. Peak Pulse Power Derating Curve

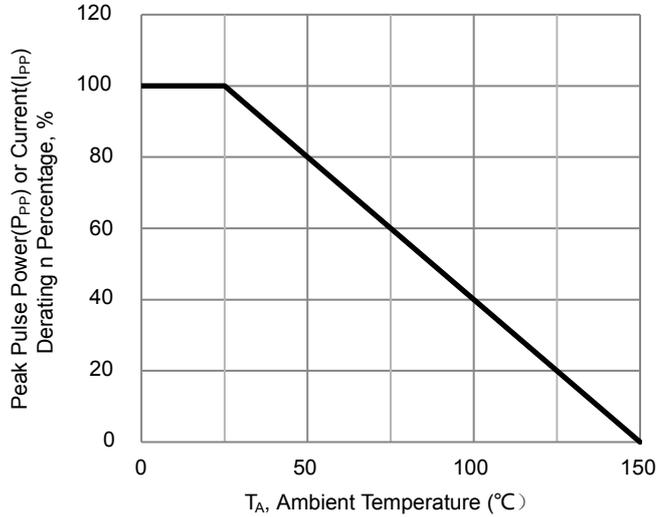


Figure 2. Pulse Power vs. Ambient Temperature

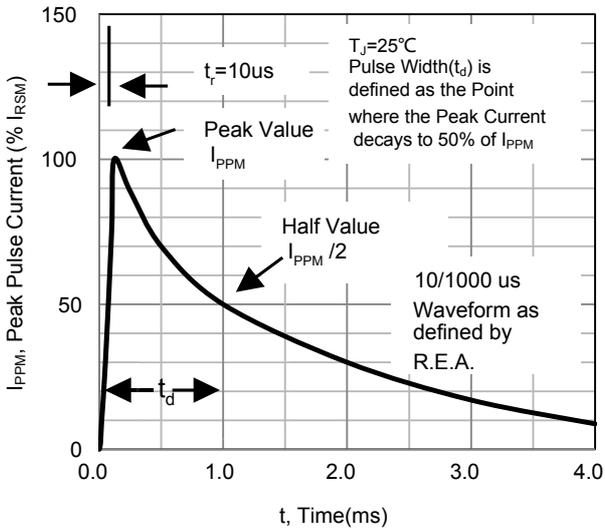


Figure 3. Pulse Waveform

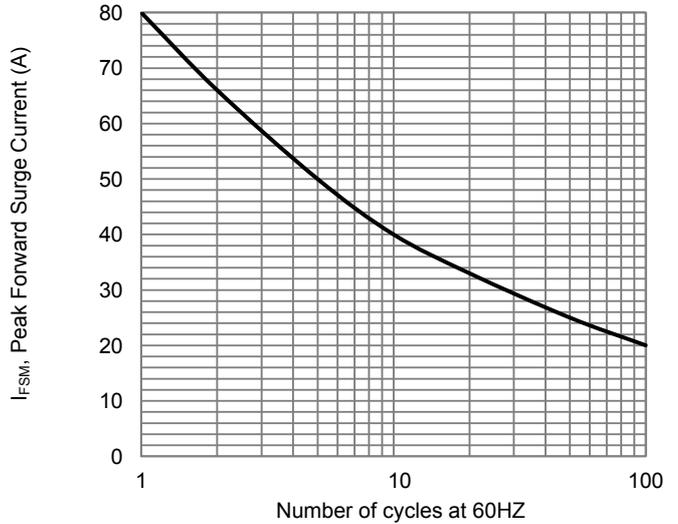
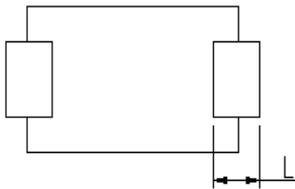
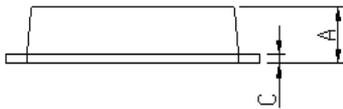
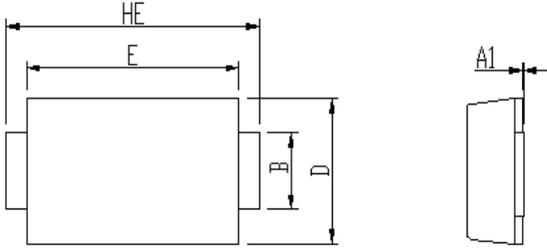


Figure 4. Maximum Non-Repetitive Peak Forward Surge Current

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Package Outline Dimensions eSGB (SMAF)



Symbol	In Millimeters		In Inches	
	MIN	MAX	MIN	MAX
A	0.90	1.08	0.035	0.043
A1	0.00	0.10	0.000	0.004
B	1.25	1.45	0.049	0.057
C	0.10	0.25	0.004	0.010
D	2.60	2.80	0.102	0.110
E	4.10	4.30	0.161	0.169
L	0.70	1.10	0.028	0.043
HE	4.80	5.20	0.189	0.205

Soldering footprint (in mm)

